

DIPTERA FROM NEPAL

SIMULIIDAE

By D. J. LEWIS

SYNOPSIS

All the specimens examined were collected in East Nepal by Mr. R. L. Coe in 1961 or 1962 and are in the British Museum (Natural History). They comprise three species, one of which is described as new. Descriptive notes are given of the single females of the other two, which cannot be identified until males or pupae are obtained.

I thank Mr. Coe for the opportunity of studying his collection. He informs me that he caught most specimens by sweeping with a net, and saw none biting.

Simulium nepalense sp. n.

(Text-figs. 1-16)

FEMALE. Wing length about 2.2 to 2.7 mm. *Head.* Frons and clypeus grey with pale scales. Antenna with segments 1 and 2, and most of 3, orange, the rest grey. Palp dark brown, vesicle as figured. Cibarium with a median ventral dark stripe having a double end. *Thorax.* Basisternum and furcasternum as figured. Scutum grey with three faint dark stripes; covered with recumbent scales which are brown over the stripes and brassy elsewhere. Scutellum with recumbent brassy scales in the centre and some dark hairs at the sides. Postscutellum bare and brown. Pleuron dark grey to brown, pleural membrane bare, pleural tuft brassy. Katepisternum with recumbent hairs. Legs with yellow and dark brown markings as figured, claw toothed. Calcipala and pedisulcus well developed. Stem vein and radius with many dark hairs, subcosta with very few. *Abdomen.* Scale and basal fringe pale, tergum 2 mainly pale or transparent, the rest brown, 6 to 8 being shiny. Sternite 1 is a vestigial colourless crescent 0.07 mm. wide and 0.02 mm. deep near the posterior border of its segment. Terminalia as figured, spermatheca with internal spicules and smooth surface.

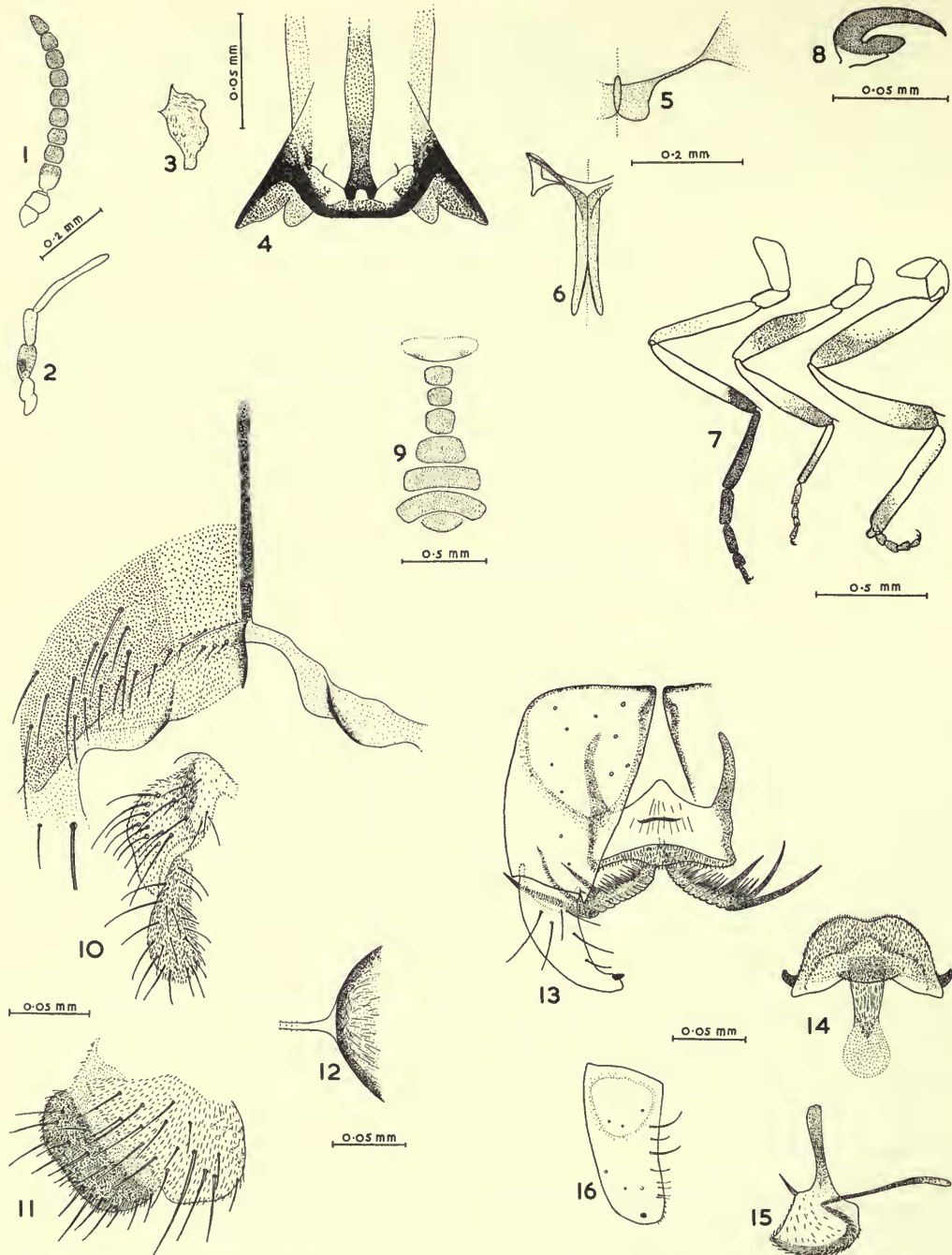
MALE. Very like the female in general colouring. *Head.* Frons, clypeus, antenna and palp coloured much as in female. *Thorax.* Scutum like that of female. Legs 1 and 2 coloured like those of female; 3 with much expanded femur, tibia and basitarsus; this leg yellow on coxa, trochanter, base of femur, basal four tenths of tibia, and basal three tenths of basitarsus, the rest dark brown. *Abdomen.* Brown; terminalia as figured.

PUPA AND LARVA. Unknown.

Holotype ♀, Taplejung District, 3.x.1961, Sangu, 6,200 ft. (R. L. Coe), B.M. (Nat. Hist.).

Paratypes, Sangu, 6,200 ft., mixed vegetation by stream, ix-x.1961, 17 ♀, 4 ♂ (R. L. Coe), B.M. (Nat. Hist.).

Other specimens examined. Taplejung District, Dobhan, c. 3,500 ft., shady places on shrubby slope above R. Tamur, 21-27.i.1962, 4 ♀, 3 ♂; Sangu, 6,500 ft., evergreen shrub above village, 5-13.x.1961, 10 ♀, 3 ♂; c. 6,200 ft., mixed vegetation



FIGS. 1-16. *Simulium nepalense* sp. n. ♀. 1, antenna; 2, palp; 3, vesicle; 4, cibarium; 5, basisternum; 6, furcasternum; 7, legs; 8, claw; 9, abdominal tergites 2 to 9; 10, 11, terminalia; 12, part of spermatheca. ♂. 13, terminalia; 14, 15, ventral plate from different angles; 16, coxite.

in deep gully, 2.i-13.ii.1962, 1 ♀; c. 6,200 ft., mixed vegetation by stream in gully, xi.1961-i.1962, 2 ♀; c. 6,200 ft., old mixed forest above village, 25-28.x.1961, 1 ♀; c. 6,200 ft., rotting fruits of Bhor tree on ground, 7-31.x.1961, 3 ♀; c. 6,200 ft., yellow blooms of cultivated composite, 19-29.x.1961, 2 ♀; c. 6,000 ft., by stream in shady ravine below village, 13.x.1961, 5 ♀; c. 4,000 ft., mixed vegetation on sheltered slopes below village and above river, 3.i.1962, 1 ♀; Arun valley, Tumlingtar area, c. 1,800 ft., evergreen shrubs below village on sandy west shore of R. Sabhaya, 9-17.xii.1961, 1 ♀.

The structure of the male terminalia suggests that this species is related to the Javanese *S. friederichsi* Edwards, 1934, from which *S. nepalense* differs in the shape of the parameral armature, the thoracic colouring of the male, and other features. I am not allotting this species to a subgenus because no pupae are available and the Oriental species are not sufficiently known. The basisternum, and the furcasternum of the metasternum, have been used for description by Davies et al. (1962).

Simulium sp. A

(Text-figs. 17-22)

FEMALE. Wing length 2.4 mm. *Head.* Frons, clypeus and posterior surface of head grey pruinose; some brassy scales on the clypeus at least. Antenna yellow. Palp dark brown, vesicle as figured. *Thorax.* Scutum brown pruinose without definite markings, with at least some recumbent brassy scales. Pleural membrane bare. Legs with yellow and brown markings as figured, claw toothed. Calcipala and pedisulcus well developed. Stem vein and radius with dark hairs. *Abdomen.* Tergite 3 is 2.6 times as broad as long. Terminalia as figured; spermatheca without spicules; and in this specimen the brown capsule bulges where it joins the duct.

MALE AND PUPA. Unknown.

Specimen examined. Sangu area, c. 6,500 ft., in evergreen scrub above village, 5-13.x.1961, 1 ♀.

I am not attempting to name this or the next species because only single females are at present available.

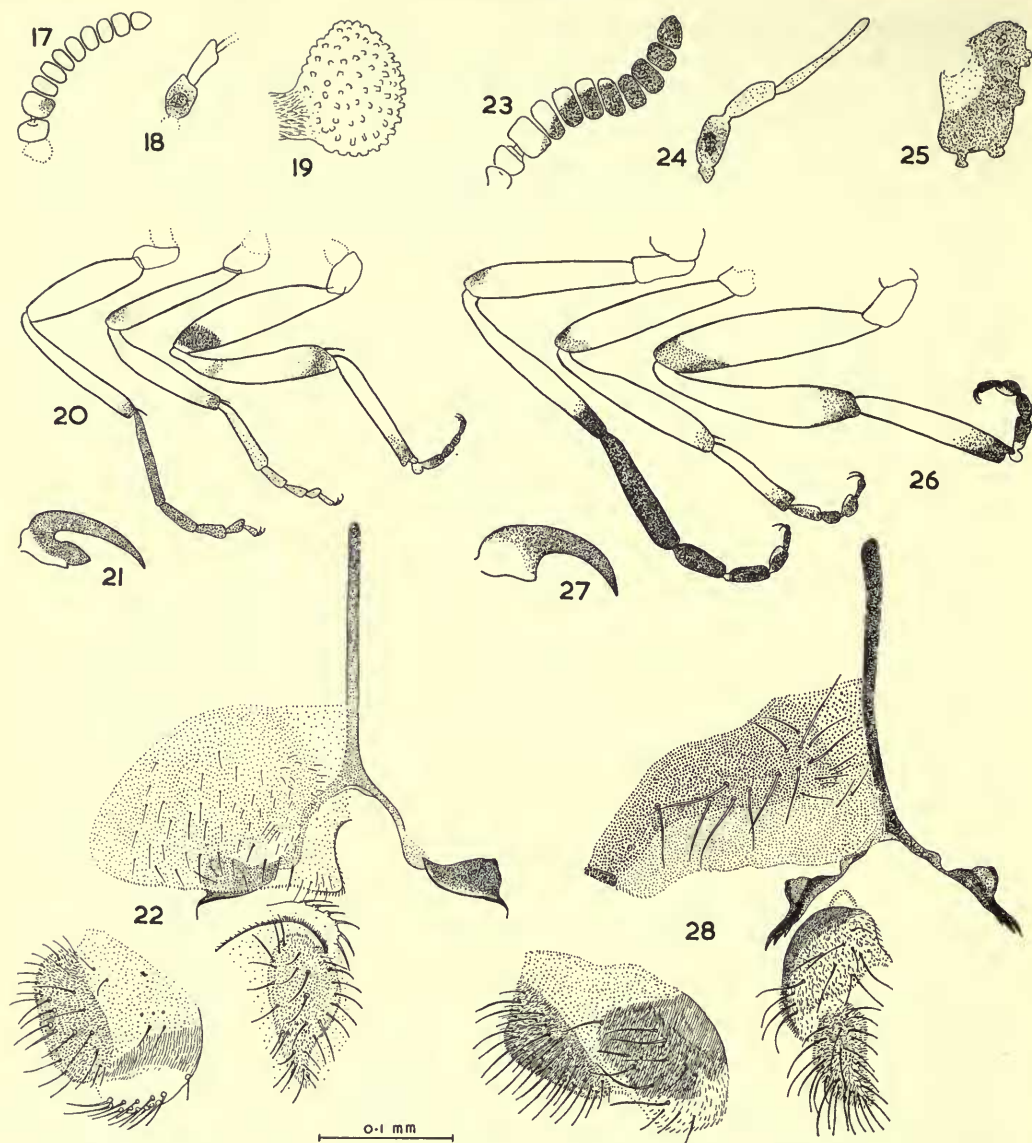
Simulium sp. B

(Text-figs. 23-28)

FEMALE. Wing length 3.3 mm. *Head.* Frons and clypeus pruinose grey with sparse dark hairs. Antenna orange and grey as figured. Palp dark brown, vesicle as figured. *Thorax.* Scutum grey pruinose with dark stripes, one narrow median, two submedian and two broad ones near the lateral margin; narrow recumbent brassy scales present. Legs with yellow and dark brown markings as figured, claw toothed. Calcipala and pedisulcus well developed. Stem vein with dark scales, radius mainly bare in this specimen. *Abdomen.* Scale and basal fringe pale, tergum 2 mainly pale or transparent, segments 4 and 5 (and possibly anterior ones) grey laterally in cleared preparations. Terminalia as figured, spermatheca apparently without spicules.

MALE AND PUPA. Unknown.

Specimen examined. Sangu area, c. 6,200 ft., mixed vegetation by stream in gully, xi.1961-i.1962, 1 ♀.



FIGS. 17-28. 17-22, *Simulium* sp. A ♀. 17, antenna; 18, part of palp; 19, vesicle; 20, legs; 21, claw; 22, terminalia. 23-28, *S.* sp. B ♀. 23, antenna; 24, palp; 25, vesicle; 26, legs; 27, claw; 28, terminalia.

REFERENCES

- DAVIES, D. M., PETERSON, B. V. & WOOD, D. M. 1962. The black flies (Diptera : Simuliidae) of Ontario. Part I. *Proc. ent. Soc. Ontario* **92** : 71-154.
 EDWARDS, F. W. 1934. The Simuliidae (Diptera) of Java and Sumatra. *Arch. Hydrobiol.* **13**, suppl.; 92-138.